CLAIMS

1. Defective recombinant adenovirus which encompasses at least one DNA sequence encoding all or an active part of a superoxide dismutase or one of its derivatives.

2. Adenovirus according to claim 1, characterized in that the DNA sequence is a cDNA sequence.

3. Adenovirus according to claim 1, characterized in that the DNA sequence is a gDNA sequence.

4. Adenovirus according to claim 1, 2 or 3, characterized in that the DNA sequence encodes a human superoxide dismutase.

5. Adenovirus according to one of claims 1 to 4, characterized in that the DNA sequence encodes human intracellular CuZn superoxide dismutase, SOD1, or one of its derivatives.

6. Adenovirus according to one of claims 1 to 3, characterized in that the DNA sequence encodes a dominant negative mutant of a human superoxide dismutase.

7. Adenovirus according to claim 1, characterized in that the DNA sequence is an antisense sequence whose expression makes it possible to control expression of the gene encoding the superoxide dismutase.

8. Adenovirus according to claim 7, characterized in that it is a gene encoding an antisense RNA which is able to control translation of the mRNA of the superoxide dismutase.

9. Adenovirus according to one of claims 1 to 8, characterized in that the DNA sequence is placed under the control of signals which allow it to be expressed in the target cells.

10. Adenovirus according to claim 9, characterized in that the expression signals are selected from among the viral promoters, preferably from among the promoters EIA, MLP, CMV and RSV-LTR.

11. Adenovirus according to claim 10 which encompasses a gDNA sequence encoding human intracellular CuZn superoxide dismutase under the control of an RSV-LTR promoter.

12. Adenovirus according to claim 10 which encompasses a cDNA sequence encoding human intracellular CuZn superoxide dismutase under the control of an RSV-LTR promoter.

13. Adenovirus according to one of claims 1 to 12, characterized in that it lacks the regions of its genome which are necessary for its replication in the target cell.

14. Adenovirus according to claim 13, characterized in that it encompasses the ITRs and an encapsidation sequence, and in which the E1 gene and at least one of the genes E2, E4 and L1-L5 are

non-functional.

15. Adenovirus according to claim 13 or 14, characterized in that it is a human adenovirus of the Ad 2 or Ad 5 type or a canine adenovirus of the CAV-2 type.

16. Use of an adenovirus according to one of claims 1 to 15 for preparing a pharmaceutical composition which is intended for treating and/or preventing neurodegenerative diseases.

17. Use according to claim 16 for preparing a pharmaceutical composition which is intended for treating and/or preventing Parkinson's disease, Alzheimer's disease, Huntington's disease, ALS and 21 trisomy.

18. Pharmaceutical composition which comprises one or more defective recombinant adenoviruses according to one of claims 1 to 15.

19. Pharmaceutical composition according to claim 18, characterized in that it also contains an adenovirus which includes a gene encoding catalase.

20. Pharmaceutical composition according to one of claims 18 to 19, characterized in that it is in injectable form.

21. Pharmaceutical composition according to one of claims 18 to 20, characterized in that it comprises between 10^4 and 10^{14} pfu/ml, preferably from 10^6 to 10^{10} pfu/ml, defective recombinant adenoviruses.

22. Mammalian cell which is infected with

one or more defective recombinant adenoviruses according to one of claims 1 to 15.

23. Cell according to claim 22, characterized in that it is a human cell.

24. Cell according to claim 23, characterized in that it is a human cell of the retinal, fibroblast, myoblast, hepatocyte, endothelial cell, Glial cell or keratinocyte type.

25. Implant which comprises infected cells according to claims 22 to 24 and an extracellular matrix.

26. Implant according to claim 25, characterized in that the extracellular matrix comprises a gelling compound which is preferably selected from among collagen, gelatin, glucosaminoglycans, fibronectin and lectins.

27. Implant according to claim 25 or 26, characterized in that the extracellular matrix also includes a support for anchoring the infected cells.

28. Implant according to claim 27, characterized in that the support preferably consists of polytetrafluoroethylene fibres.

add A1

add B2

add E)